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## Employee Job Description

Department: Mercer County Bridge Department

Position Title: Engineer Assistant

Pay Classification: P&A 09 (Entry \$60,667 – \$86,274/yr.)

Benefits: Full Medical Package  
13 Paid Holidays per year  
Paid Vacation and Sick time  
County Pension Plan

Reports To: Bridge Dept. Head / Engineer

Date of Job Description Creation/Update: 04/10/2024

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### **Position Summary:**

This position is responsible for managing bridge projects and funding. This individual works independently using technical design skills to conduct or manage the development of plan sets and specifications for bridge repair, rehabilitation and/or reconstruction projects. Related tasks include assembling permit application information, tabulating quantities, generating cost estimates, conducting engineering studies, developing reports, completing forms, writing special provisions and creating maps, tables, charts, etc. During project construction, this individual reviews submissions, provides contract administration services and performs inspections. General project instruction and oversight is provided by the department head / engineer and completed work is reviewed in accordance with standards. This individual will also assist with the federally required National Bridge Inspection Standard (NBIS) safety inspections of locally owned bridges across Mercer County. This position provides supervision to bridge maintenance leaders and assistant bridge inspector / engineering technician; also coordinates tasks with administrative secretary.

## **Qualifications and Skills:**

- ◆ Knowledge of the principles and methods applied in safety inspections of existing bridge and culvert type structures including the techniques and procedures involved in the collection and evaluation of technical data.
- ◆ Understanding of the various bridge components, their functions and the effects of deterioration to safely inspect and evaluate the structure.
- ◆ Familiar and proficient with PennDOT standards, the properties of construction materials and their placement characteristics, and the use of CADD and other engineering software related to bridge design
- ◆ Experience preparing technical plans and specifications for bridge project
- ◆ Able to read and interpret surveys, mapping, deeds, design plans, construction plans, standards and specifications, etc.
- ◆ Adept to climb structural steel with sufficient physical stamina and to work in adverse weather conditions and on hazardous terrain.
- ◆ Capable of developing and maintaining effective professional working relationships with coworkers, public and agencies such as PennDOT.
- ◆ Advanced mathematical skills (engineering and surveying) and computer literacy (spreadsheets and databases).
- ◆ Perform quantity tabulations, cost estimating and develop project budgets
- ◆ Knowledgeable about the construction bidding process and procedures
- ◆ Understand construction administration and inspection
- ◆ Interpret state and federal regulation, policy and guidance
- ◆ Detail oriented and organized

## **Required Certifications and Licensures:**

- ◆ Bachelor's degree or higher in structural engineering or related field
- ◆ Obtain PennDOT's FHWA approved comprehensive bridge inspection training certificate within two years of employment
- ◆ Possess a valid driver's license
- ◆ Pass a physical examination
- ◆ Additional construction inspection related certifications to be obtained on the job:
  - PennDOT Concrete Technician Certification; and/or
  - NECEPT Field Technician Certification; and/or

- National Institute for Certification of Engineering Technicians (NICET) Level II certification or higher in Highway Construction

### **Responsibilities and Duties:**

- ◆ Ability to perform bridge safety inspections to document the condition of in-service bridges. Supervises bridge data compilation and measurement recording. Inspect bridge structural members, foundation supports, and components in accordance with the National Bridge Inspection Standards and PennDOT requirements. Prepare documentation for submission to PennDOT and maintain all records required by the standards.
- ◆ Schedules bridge safety inspections within federal and state timelines.
- ◆ Travels to field sites to perform inspections.
- ◆ Identifies critical changes to the condition of bridges such as accident damage, scouring and undermining, corrosion, and disintegration of concrete, to determine hazards to the public.
- ◆ Coordinates the preparation of bridge inspection reports documenting findings regarding the current condition and deficiencies, including information such as measurements, photographs, sketches, and descriptions.
- ◆ Recommends repairs for deficiencies found during bridge safety inspections and assigns priority of repairs to bridges. Prepares the schedule of needed repairs and supervises the work of the Bridge Maintenance Leader on projects. Collects and maintains records of such repairs.
- ◆ Assist in the determination of the most appropriate rehabilitation or reconstruction project at specific bridge locations.
- ◆ Conduct or manage various elements of the design process for bridge rehabilitation and reconstruction projects from the preliminary engineering phase to the final design phase in accordance with PennDOT standards, including but not limited to:
  - A. taking site measurements and surveys
  - B. computing stations, offsets, elevations, equalities, etc.
  - C. developing roadway and bridge plans, profiles and cross sections
  - D. developing detail drawings, working plans and required notes
  - E. developing related plans such as:
    - a. right-of-way
    - b. utility relocation
    - c. traffic control
    - d. erosion & sedimentation pollution controls
  - F. preparing submissions such as:
    - a. geotechnical requirements
    - b. foundation designs
    - c. DEP general permit applications
    - d. final design calculations

- G. conducting engineering studies such as:
  - a. hydraulic reports
  - b. environmental studies
  - c. wetland identification and delineations
- H. performing quantity tabulations and checks
- I. performing quality control process
- J. developing cost estimates and project budgets
- K. preparing special provision specifications
- L. compiling bidding requirements

- ◆ Read and interpret deeds, maps, photographs, blueprints, engineering data, sketches and other written and oral information related to bridge design. Coordinate the proposed bridge design around the existing structure. Determine and coordinate the process for required right-of-way and utility relocations.
- ◆ Determine various design details related to bridge construction, for example, location and number of reinforcement bars, etc. Prepare computations utilizing design software as required.
- ◆ Prepare input spreadsheets and utilize industry software to perform load ratings for various legal loads and overweight permits. Use these methods to assist in repair determinations and/or recommend restrictions.
- ◆ Act as inspector-in-charge for projects and ensure that construction documentation adheres to established state and federal guidelines. Responsible for assuring work is performed in conformity with the plans and specifications; for determining and documenting the quality and quantity of materials and work items; for as-built drawings; and for processing payment estimates, invoices and reimbursement requests.
- ◆ Assist with development of county budgets for bridge department funds.
- ◆ Track expenditure reports related to project costs.
- ◆ Complete dotGrants project completion reports.
- ◆ Performs other related tasks and duties as required or assigned.

### **Physical Requirements:**

- ◆ Able to climb steep embankments carrying equipment
- ◆ Able to climb structural steel with sufficient physical stamina
- ◆ Able to work outside in adverse weather conditions and to traverse hazardous terrain
- ◆ Able to lift 50 lbs. on a regular basis.
- ◆ Able to lift up to 100lbs. on an infrequent basis.
- ◆ Able to walk, climb, kneel, stoop, and squat as needed to perform bridge structure inspections.

### **To Apply:**

Please complete the standard County of Mercer Application and send a letter of interest, salary history, and your resume to the following:

Mercer County HR Dept.  
17 Courthouse  
Mercer, PA 16137

County of Mercer Standard Applications can be printed from the county website or can be obtained by stopping in the Human Resource office located on the basement level of the Courthouse.

**Deadline to Apply: May 3, 2024**